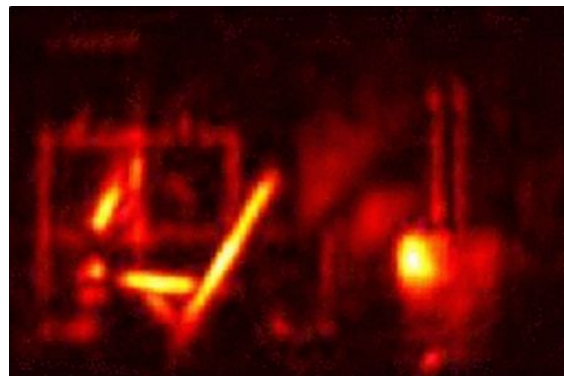


VIRTUALIGHT: Virtual optics for transient imaging

Join the Graphics & Imaging Lab
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What is the project about?

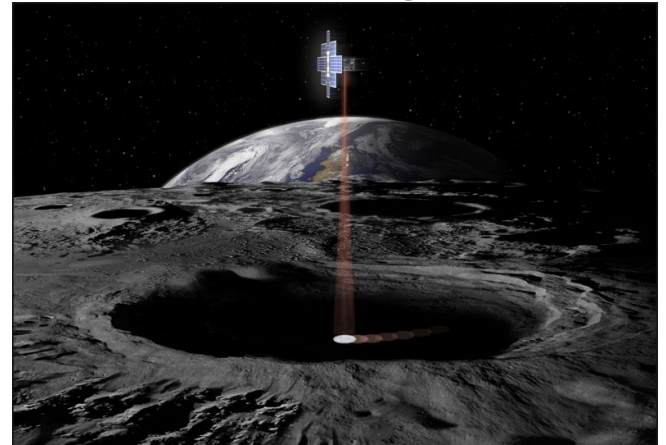
We aim to advance the state of the art in **non-line-of-sight imaging**, i.e., how can we make cameras see *scenes hidden around a corner*? Take a look at our most recent results; on the left, our office scene, hidden from view. The camera is placed outside, and never sees the scene. On the right, our reconstructed image.



How is this possible?

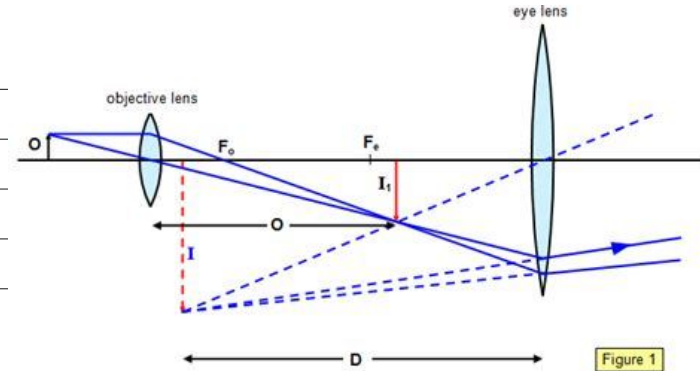
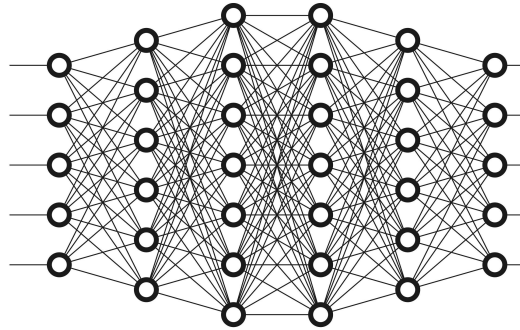
In our [recent Nature paper](#) (in collaboration with the University of Wisconsin) we derived a new formulation of light transport which we termed *phasor fields*. It allows us to model the non-line-of-sight problem as a simpler line-of-sight problem, using a computational optical system. In a nutshell, **we transform any wall into a virtual camera!**

Possible applications of this technology range from autonomous driving to medical imaging or even exploring lunar caves from orbiting satellites.



VIRTUALIGHT

This project will expand our phasor field framework using a novel combination of computer graphics, computational imaging, deep learning, and classic optics. You will get to work in any of these fields, depending on your qualifications and preferences.



Researchers

Diego Gutiérrez



Project co-PI and PhD advisor
<http://giga.cps.unizar.es/~diegog/>

Adolfo Muñoz



Project co-PI and PhD advisor
<http://giga.cps.unizar.es/~amunoz/>

Our research environment and collaborators



<https://graphics.unizar.es/offerfpi.html>



Universidad
Zaragoza

Some former PhD students (and where are they now)



Ana Serrano

Max-Planck-Institute for Informatics



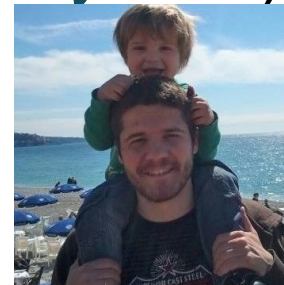
Jose I. Echevarria

Adobe Systems Inc.



Jorge Jimenez

Blizzard Activision



Jorge Lopez

Seddi Labs



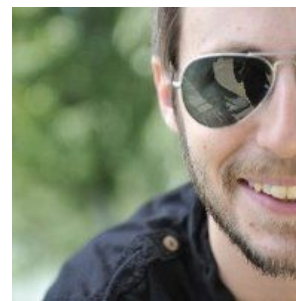
Elena Garces

URJC



Fernando Navarro

Aereal Insights



Oscar Anson

Autodesk / Solid Angle

What we offer

- Up to four years research contract
- Specific tasks within the project will be adapted to the student's background
- 1100€/month
- Research stays at top universities worldwide
- Possibility of internships in high-profile international companies
- Participation in the best international conferences
- Excellent doctoral thesis with international prospect and great job opportunities.

Interested? Write to diegog@unizar.es and adolfo@unizar.es

Requirements

- Degree on Engineering, Computer Science, Physics or Mathematics
- 60 Master level ECTS credits **as of June 2021**
- Good academic record
- Good spoken and written English
- Deadline **October 27th**

APPLY NOW

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